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2018 ANNUAL SCIENTIFIC OBSERVER REPORT FOR CHINESE TAIPEI TUNA LONGLINE FISHERY IN THE IATTC CONVENTION AREA

Summary

This document provides summarized information of the deployment of Taiwanese scientific observers in IATTC Convention Area in 2018. In 2018, there were 26 observation trips conducted by Taiwanese scientific observers in the Convention Area with 13 observation trips' data retrieved. The complete information on our observers deployed will be updated next year. In addition, the information for 2017 included in this document is updated with complete retrieved observer data.

Keywords

Longline, Taiwan, Scientific observer, Tuna fisheries

Introduction

In accordance with Resolution C-11-08, this document provides summarized information of the deployment of Taiwanese scientific observers on our tuna longline fleet in 2018. In 2018 there were 26 observation trips conducted on Taiwanese tuna longline vessels with 13 observation trips data retrieved completely.

Training of the scientific observer

Taiwan launched the scientific observer program of deep-sea tuna fisheries in 2001. Fisheries Agency (FA) is responsible for implementing the program and recruiting scientific observers.

The education requirement for observers is at least senior high school graduated, and the ability to live and work at sea are also required for observers. Candidate observers have to take a 3-week training program, and attend a final test. Only those who pass both the final test and health check can be hired as scientific observers.

The observer training program includes basic safety training for seafaring, operations of navigation devices, mini-log thermometer and VMS system, species identification (including tunas, tuna-like species, sea turtles, seabirds, sharks and marine mammals), skill for sampling muscle tissue, otolith, stomach content and gonad, and data collection for fishing activities, catches and locations.

Results

i) Number of observation trip and coverage rate estimate

Table 1 shows the summary of observation trips conducted in IATTC Convention Area with data retrieved in 2018. The preliminary observer coverage rate in this year was estimated at 11.20% by number of fishing operations, 11,167 operation with 1,251 observed.

ii) Observation records

Observers are required to record detailed information of each catch, including bycatch, onboard and discard with species identification during working hours. They are also required to take photo on the bycatch species according to the requirement of our observer program. The list of species recorded compiled from observation data in 2018 is shown in Table 2.

iii) Operation distributions of observed tuna longliners

Operation distributions of observed Taiwanese tuna longliners with observation data retrieved is shown in Fig 1.

iv) Complementary and updating information

The summarized information on observation data for 2017 and 2018 is presented in Table 3 with complete retrieved observation data of 2017.

Table 1. Summary of 13 observation trips with data retrieved in IATTC Convention Area in 2018.

TRIP ID	Range of latitude	Range of longitude	Start date of operation	End date of operation	Number of operation observed	Number of hooks observered
Trip1	5.6S-2.2S	150W-145.2W	2018/01/01	2018/02/03	21	58,650
Trip2	20.2S-14.3S	130.6W-125.4W	2018/01/01	2018/02/03	26	90,702
Trip3	13.2S-5.5S	129W-120.3W	2018/01/01	2018/01/20	16	40,960
Trip4	10.1S-2.2S	148.2W-144.1W	2018/01/02	2018/02/10	32	90,640
Trip5	17.1S-12.5S	131.2W-123W	2018/01/02	2018/02/07	26	80,028
Trip6	20.1S-13.5S	131W-126W	2018/01/01	2018/02/02	27	99,765
Trip7	19.1S-9.3S	146.4W-120.6W	2018/01/01	2018/03/12	48	187,264
Trip8	20.2S-14.5S	130.5W-125.5W	2018/01/01	2018/01/21	16	60,480
Trip9	19.2S-11.3S	134.2W-126.1W	2018/01/01	2018/02/23	29	99,900
Trip10	32N-32N	149.4W-145W	2018/01/01	2018/01/04	2	8,160
Trip11	3.2S-2.3S	149.4W-148.5W	2018/01/20	2018/01/23	3	10,720
Trip12	17.4S-10.3S	145.6W-121.5W	2018/01/01	2018/03/03	36	104,544
Trip13	10.1S-4S	147.5W-131.5W	2018/04/26	2018/09/16	92	249,040
Total					374	1,180,853

Table 2. List of species recorded compiled from the data of 13 observation trips in IATTC Convention Area in 2018(Unit: Number of individual).

Cruises / Species	Trip1	Trip2	Trip3	Trip4	Trip5	Trip6	Trip7	Trip8	Trip9	Trip10	Trip11	Trip12	Total
ALB	0	379	10	13	157	356	1146	323	350	15	0	806	14
ALV	0	0	0	0	0	0	0	0	0	0	0	0	36
ALX	4	1	3	0	0	95	348	27	0	0	1	74	109
BAR	0	0	0	0	0	0	8	0	0	0	0	1	0
BET	104	8	35	197	10	0	166	8	21	27	21	29	357
BLM	0	0	0	0	0	0	0	0	0	0	0	0	4
BLZ	0	21	0	23	0	3	63	4	8	0	0	67	13
BRZ	17	0	4	36	0	0	35	0	0	2	5	0	57
BSH	2	9	13	28	0	0	102	0	8	6	2	20	188
BTH	4	0	3	9	0	0	0	0	0	0	1	0	1
BUM	1	0	0	0	0	0	0	0	1	0	0	0	0
DOL	0	0	0	0	0	0	0	0	0	0	0	0	2
FAL	0	0	0	9	0	0	1	0	0	0	0	0	2
ISB	0	0	0	0	0	0	0	0	0	0	4	0	0
LAG	0	0	4	2	0	0	7	0	0	1	0	0	2
LEC	8	9	27	39	0	0	95	0	0	4	1	0	297
LMA	0	0	0	3	0	0	1	0	0	0	0	0	2
MLS	0	1	0	0	0	0	2	0	0	0	0	1	7
OCS	0	2	0	5	0	0	9	0	0	0	1	0	2
OIL	0	0	2	12	0	0	0	0	0	0	0	0	2
OTH	0	0	0	1	0	0	0	0	0	0	0	0	0
PLS	50	0	0	0	0	0	327	0	0	0	0	35	15
PSK	9	0	0	0	0	0	0	0	0	0	0	0	51
REL	0	0	0	0	0	0	1	0	0	0	0	0	1
RMV	0	0	0	0	0	0	0	0	0	0	0	0	2
SFA	0	0	0	0	0	1	0	0	0	0	0	0	0
SKJ	0	47	3	0	0	0	41	0	2	7	1	22	0
SMA	0	0	0	0	0	0	1	0	0	1	0	0	1
SSP	1	33	0	0	0	0	24	1	2	0	1	0	2
STI	0	0	1	0	0	5	0	2	0	0	1	0	39
SWO	34	1	33	31	0	0	29	1	2	0	10	0	87
WAH	1	115	2	4	0	36	115	32	16	0	0	36	25
YFT	3	30	4	52	24	0	205	2	22	4	4	32	113
Total	238	656	144	464	191	496	2,726	400	432	67	53	1,123	1,431

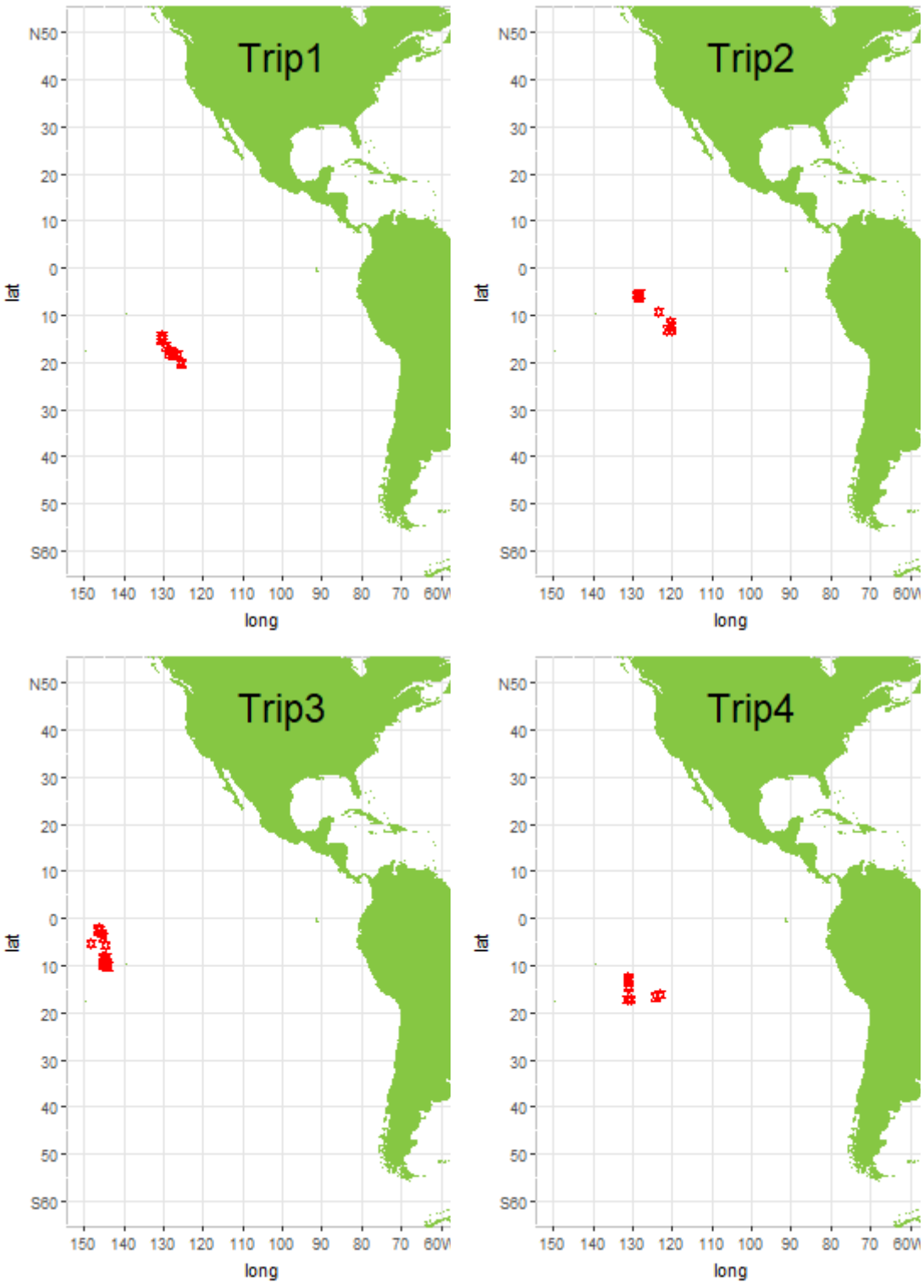


Fig 1. The operation locations of observed Taiwanese tuna longliners with data retrieved in IATTC Convention Area in 2018.

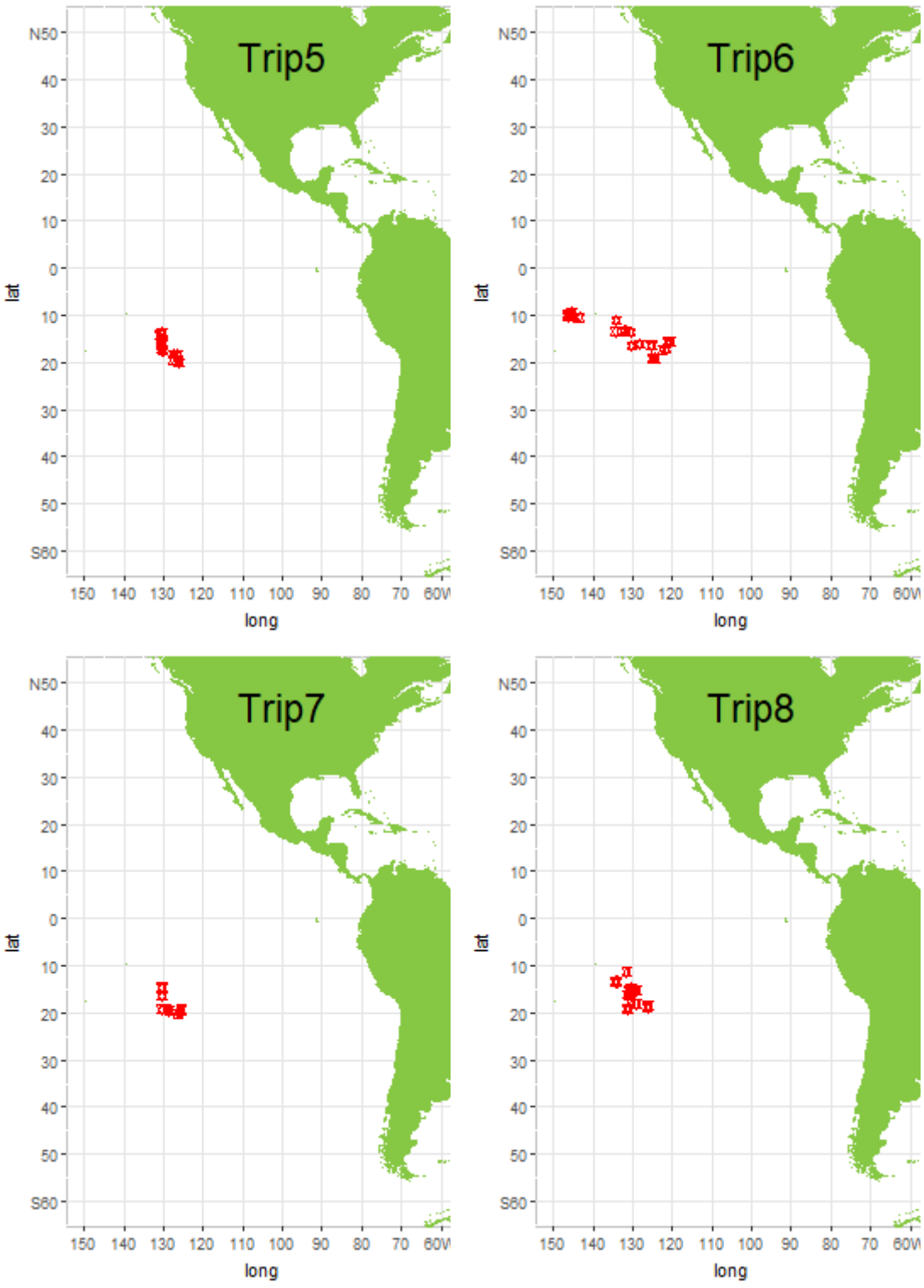

Trip5
Trip6
Trip7
Trip8
lat
long
N50
40
30
20
10
0
10
20
30
40
50
S60
150 140 130 120 110 100 90 80 70 60W

Fig.1 cont.

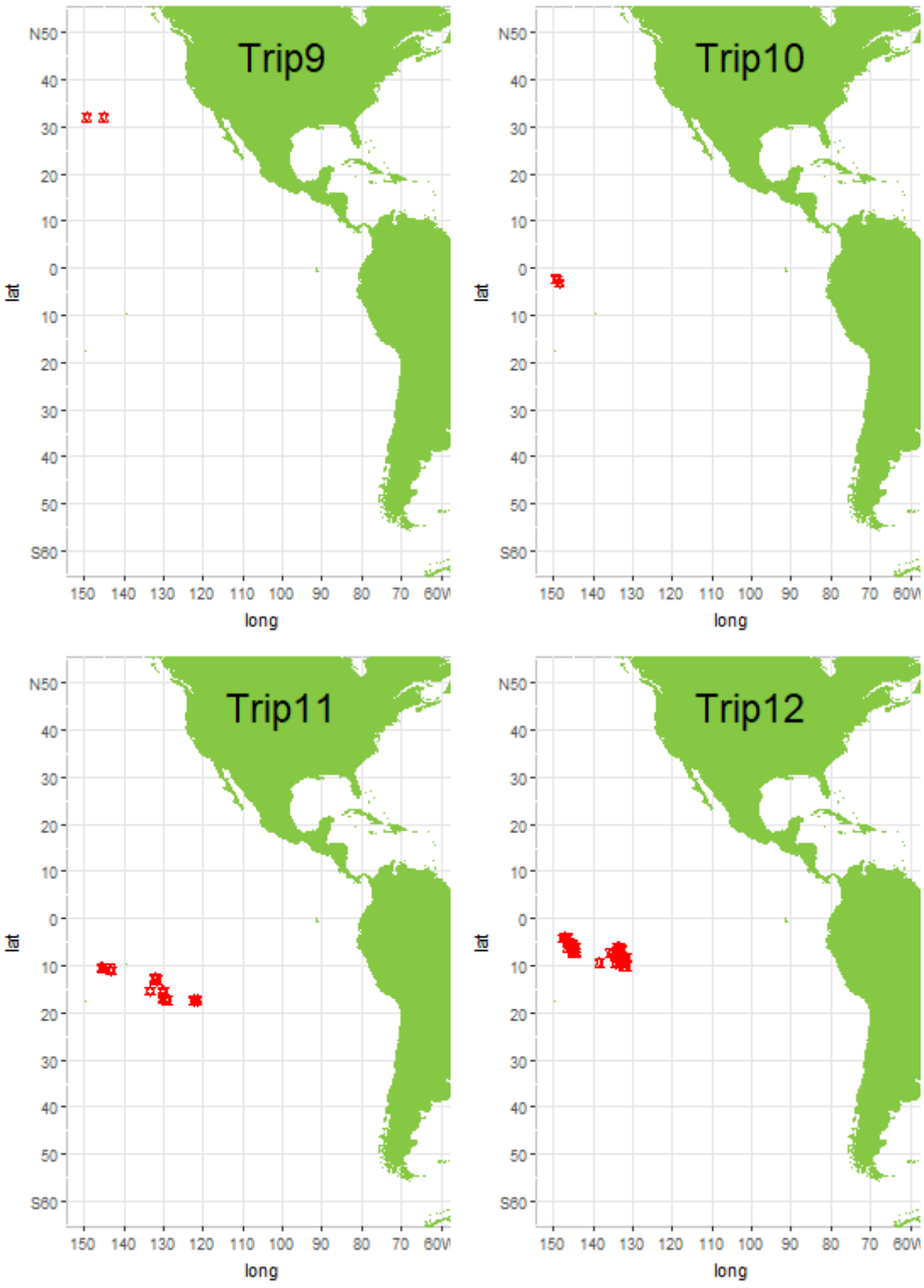
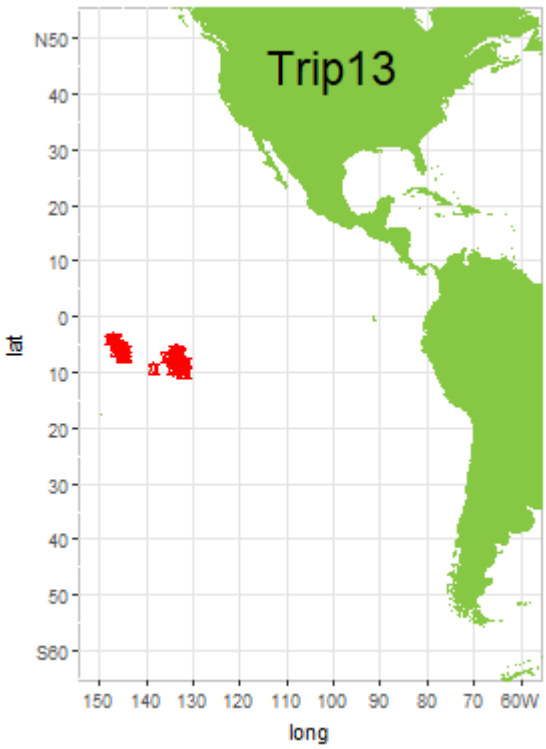

Trip9
Trip10
Trip11
Trip12
lat
long
N50
40
30
20
10
0
10
20
30
40
50
S60
150
140
130
120
110
100
90
80
70
60W

Fig.1 cont.


Trip13
N50
40
30
20
10
0
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20
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S60
lat
150
140
130
120
110
100
90
80
70
60W
long

Fig.1 cont.

Table 3. Summary of observation data for 2017 and 2018

1. Country	TW	TW
2. Fishing year	2017	2018*
3. Total catches of the longline fleet (T)	16,829 MT	15,999 MT
4. Total fishing days in the year of the longline fleet	13,012	11,167
5. Percent coverage of fishing effort by observers (considered as fishing days)	10.34%	11.20%
6. Total catch by vessels with observers on board	911 MT	152MT
7. Species composition of catches in vessels with observers on board	**WEIGHT**:ALB(36.38%),BET(34.23%),YFT(6.03%),SWO(9.01%),BUM(0.11%),MLS(0.52%),SKX(4.16%),OTH(9.56%) **NUMBER**:ALB(46.09%),BET(16.98%),YFT(5.18%),SWO(4.32%),BUM(0.04%),MLS(0.27%),SKX(3.89%),OTH(23.22%)	**WEIGHT**:ALB(43.94%),BET(28.76%),YFT(8.16%),SWO(6.53%),BUM(0.09%),MLS(0.34%),SKX(4.54%),OTH(7.64%) **NUMBER**:ALB(54.53%),BET(14.14%),YFT(7.23%),SWO(3.05%),BUM(0.03%),MLS(0.17%),SKX(4.13%),OTH(16.72%)
8. Number of vessels with observers on board	26	13
9. Number of sea turtles caught incidentally on trips with observers	7	0
10. Sea turtles caught incidentally were released?	7	0
11. Number of sharks caught in trips with observers	2,107	536
12. Number of rays captured on trips with observers	534	468
13. Number of billfishes captured in trips with observers	1,873	306
14. Number of hooks used on fishing trips with observer	4,300,833	1,175,243
15. Type of hooks used	circle hook:36% tuna hook:45% teracima hook:11% J hook:8%	circle hook:40% tuna hook:47% teracima hook:13% J hook:0%

Year	2017	2018*
Observer data on the number of OCS released with fate information	9(alive), 28(dead), 3(unknown)	8(alive), 11(dead), 0(unknown)

Observer data on the number of RMB released with fate information	0	0
Observer data on the number of RMV released with fate information	0	2(alive)

* The data of 2018 is still preliminary because our observer data have not been retrieved completely.

** RMB: Manta rays

*** RMV: Mobula rays

Acknowledgement

We greatly appreciate all scientific observers for their efforts to collect valuable data and samples on Taiwanese longline vessels. We also would like to express special thanks to all crew members of the observed longline vessels for appreciating their understanding and cooperation with our observer program.